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ANOTHER CESTODE FROM THE YOUNG CAT¹

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The ability of certain carnivore cestodes to develop in more than one host suggested the question: Will the common dog tapeworm, *Tania pisiformis* Bloch, develop in the domestic cat (*Felis domestica*).

Several kittens reared in cages covered with wire screen (eighteen mesh) were given *Cysticercus pisiformis* from the peritoneal cavity of the cottontail, *Sylvilagus floridanus mearnsii* (intermediate host of this dog tapeworm).

In the experiment, three control and eight experimental kittens were used. When kittens 22, 23, 24, 25, 27, 29, and 32 were approximately six weeks old, feedings of cysticerci were made every few days until from ten (kittens 27, 29, 32) to approximately seventy-five cysts had been fed to each kitten. The examinations of these animals yielded the following results:

Kitten 27, examined two days after feeding, three tapeworms (length, 3.5 and 4 mm.) in the small intestine.

Kitten 29 (died), examined two days after feeding, eight tapeworms (length, 3.5 to 6 mm.) in the small intestine.

Kitten 32 (died), examined five days after feeding, five tapeworms (length, 6 to 10 mm.) in the small intestine.

Kitten 24, examined twenty-one days after first feeding, two tapeworms (length, 6 mm.) in the small intestine.

Kitten 25, examined twenty-two days after first feeding, three tapeworms (length, 10 mm.) in the small intestine.

Kitten 23, examined fifty-two days after first feeding, four tapeworms (length, 4, 5.5, 12.5, 22 mm.) in the small intestine.

Kitten 22, examined ninety-eight days after first feeding, no tapeworms.

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Of the cestodes obtained from these kittens, two from kitten 23 were developed to the extent of having reproductive organs fully formed. A description of them will be given later.

To ascertain in what part of the digestive tract evagination of the cysticerci occurs, kitten 26 was given ten of these cysts on the morning of July 24. Upon examination five and one-half hours later, four young tapeworms (evaginated cysticerci) were found in the posterior part of the duodenum attached to its wall. The remaining six cysts were in the stomach still in the invaginated condition. Thus, it is obvious that the evagination of *Cysticercus pisiformis* occurs in the duodenum of the young cat.

Most of the tapeworms obtained in the experiment were young, but two specimens had the reproductive organs fully formed. The description here given includes the number and size of the rostellar hooks of all of the tapeworms obtained (twenty-nine). Head, 0.846 mm. in diameter; rostellum powerful, armed with a double row of 38 to 44 hooks, alternating large (225 to 270 microns) and small (117 to 171 microns); ventral root of small hooks bifid. Neck, 1.75 mm. long, slightly narrower than the head. Genital pores irregularly alternate, very prominent. Proglottid at first narrow and much shorter than broad, becoming nearly square in the posterior region; testes numerous, filling interior of proglottid, but not occurring laterad of the excretory canals; vas deferens coiled before reaching cirrus pouch; vagina leading to two ovaries in the distal half of the proglottid; uterus single and median, not filled with oncospheres. Length of strobila 22 mm. The lack of eggs, of course, indicates that the specimens are not wholly mature, and this accounts in part for their smaller size. All of the other characters, however, agree so closely with those of *T. pisiformis* Bloch that these tapeworms, apparently, are of that species.

The control kittens which were kept in the experimental cages, but not fed cysticerci, did not contain a tapeworm, while seven of the eight kittens that were fed *Cysticercus pisiformis* became infected with tapeworms, all of which agree with *T. pisiformis* in number and size of rostellar hooks, and two larger specimens agree so closely with this species that they are considered by the writers to be slightly immature specimens of *T. pisiformis* Bloch.

The larval form of this tapeworm develops occasionally in hares and in mice (Stiles, 1906:43), but it is well known that its usual intermediate host is the cottontail. Considering the abundance of the latter and the large numbers of cats that have been examined for parasitic worms, it is evident that *T. pisiformis* rarely develops in the cat. However, this may be accounted for in part by the fact that after the young cottontail has eaten the tapeworm oncospheres, from six weeks to two months are required for the cysticerci to develop and by this time the cottontails are usually large enough to evade the cat.

This cestode is sufficiently generalized to develop also in the fox (Cobbold, 1876:674), and Benoit-Bazille and Dramard (1905:10) report it (under the name of *T. serrata* Goeze) from the tiger. On the other hand, evidences of specialization are not lacking. Several attempts to infect man have failed according to Hall (1913:43) who ingested three cysticerci of this species with negative results, and Scott's (1913:263) attempt to infect swine likewise failed.

SUMMARY

The dog tapeworm, *Tenia pisiformis* Bloch, may develop in the young cat (*Felis domestica*).

Evagination of *Cysticercus pisiformis* occurs in the duodenum of the domestic kitten.

LITERATURE CITED

- BENOIT-BAZILLE, H., and DRAMARD, J.
1905. Deux nouveaux parasites du tigre royal. *Naturaliste*, (2) 28:10.
- COBBOLD, TH. S.
1876. Remarks on the Study of Parasites, with Suggestions in Reference to the Management of Sheep suffering with Nematoid Worms. *Veterinarian*, Lond., 49:673-676.
- HALL, M. C.
1914. Experimental Ingestion by Man of Cysticerci of Carnivore Tapeworms. *Jour. Parasit.*, 1:5-9.

SCOTT, J. W.

1913. The Viability of Certain Cysticerci in Pigs and in Young Dogs. Science, N. S., 37:263.

STILES, C. W.

1906. Illustrated Key to the Cestode Parasites of Man. Bull. 25, Hyg. Lab., U. S. Pub. Health and Mar.-Hosp. Serv., Washington, pp. 1-104.